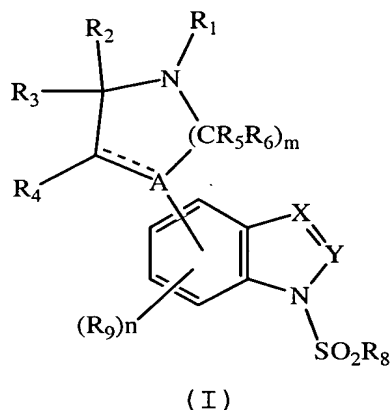


## WHAT IS CLAIMED IS:

1. A compound of formula I



5

wherein

- A is C, CR<sub>10</sub> or N;
- 10 X is CR<sub>11</sub> or N;
- Y is CR<sub>7</sub> or N with the proviso that when X is N, then Y must be CR<sub>7</sub>;
- R<sub>1</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or
- 15 cycloheteroalkyl group each optionally substituted;
- R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently H, halogen, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkyl group;
- 20 R<sub>7</sub> and R<sub>11</sub> are each independently H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl, heteroaryl or C<sub>1</sub>-C<sub>6</sub>alkoxy group each optionally substituted;
- R<sub>8</sub> is an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl or heteroaryl group each optionally substituted;
- 25 R<sub>9</sub> is H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-C<sub>6</sub>alkenyl, aryl or heteroaryl group each optionally substituted;

R<sub>10</sub> is H, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkoxy group;

m is an integer of 1, 2 or 3;

n is 0 or an integer of 1, 2 or 3; and

5     ---- represents a single bond or a double bond; or  
a pharmaceutically acceptable salt thereof.

2.     The compound according to claim 1 wherein A is N and m is 2.

10

3.     The compound according to claim 1 wherein R<sub>8</sub> is an optionally substituted phenyl group.

4.     The compound according to claim 1 wherein R<sub>2</sub>,  
15     R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are H.

5.     The compound according to claim 2 wherein R<sub>1</sub> is H or a C<sub>1</sub>-C<sub>6</sub>alkyl or cycloheteroalkyl group each optionally substituted.

20

6.     The compound according to claim 5 selected from the group consisting of:

1-(phenylsulfonyl)-4-piperazin-1-yl-1H-indole;

1-[(2-bromophenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;

25     1-[(6-chloroimidazo[2,1-b][1,3]thiazol-5-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;

1-[(3,4-dimethoxyphenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;

30     1-[(5-chloro-3-methyl-1-benzothien-2-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;

1-[(4-bromophenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;

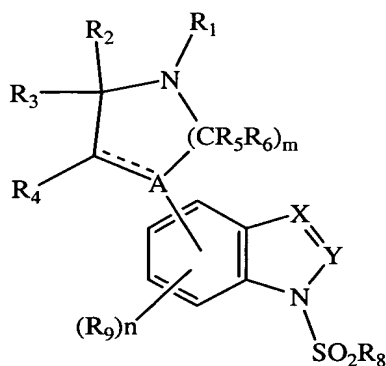
1-[(5-bromothien-2-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;

35     1-[(4,5-dichlorothien-2-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;

methyl 4-[(4-piperazin-1-yl-1H-indol-1-yl)sulfonyl]phenyl  
 ether;  
 4-piperazin-1-yl-1-[(4-  
 (trifluoromethoxy)phenyl)sulfonyl]-1H-indole;  
 5 4-(4-benzylpiperazin-1-yl)-1-(phenylsulfonyl)-1H-indole;  
 4-(4-benzylpiperazin-1-yl)-1-[(2-bromophenyl)sulfonyl]-  
 1H-indole;  
 4-(4-benzylpiperazin-1-yl)-1-[(6-chloroimidazo[2,1-  
 b][1,3]thiazol-5-yl)sulfonyl]-1H-indole;  
 10 4-(4-benzylpiperazin-1-yl)-1-[(3,4-  
 dimethoxyphenyl)sulfonyl]-1H-indole;  
 4-[4-(3-methoxybenzyl)piperazin-1-yl]-1-(phenylsulfonyl)-  
 1H-indole;  
 1-(phenylsulfonyl)-4-[4-(pyridin-4-ylmethyl)piperazin-1-  
 15 yl]-1H-indole;  
 1-(phenylsulfonyl)-4-[4-(pyridin-3-ylmethyl)piperazin-1-  
 yl]-1H-indole;  
 1-[(2-bromophenyl)sulfonyl]-4-[4-(3-  
 methoxybenzyl)piperazin-1-yl]-1H-indole;  
 20 1-[(2-bromophenyl)sulfonyl]-4-[4-(pyridin-4-  
 ylmethyl)piperazin-1-yl]-1H-indole;  
 1-[(2-bromophenyl)sulfonyl]-4-[4-(pyridin-3-  
 ylmethyl)piperazin-1-yl]-1H-indole;  
 1-(phenylsulfonyl)-5-piperazin-1-yl-1H-indazole;  
 25 1-(phenylsulfonyl)-6-piperazin-1-yl-1H-indazole;  
 1-[(2-bromophenyl)sulfonyl]-6-piperazin-1-yl-1H-indazole;  
 1-[(4-bromophenyl)sulfonyl]-5-piperazin-1-yl-1H-indazole;  
 1-[(4-bromophenyl)sulfonyl]-6-piperazin-1-yl-1H-indazole;  
 1-[(5-bromothien-2-yl)sulfonyl]-5-piperazin-1-yl-1H-  
 30 indazole;  
 1-[(5-bromothien-2-yl)sulfonyl]-6-piperazin-1-yl-1H-  
 indazole;  
 1-[(4-fluorophenyl)sulfonyl]-5-piperazin-1-yl-1H-  
 indazole;

1-[(4-fluorophenyl)sulfonyl]-6-piperazin-1-yl-1H-indazole;  
 methyl 4-[(5-piperazin-1-yl-1H-indazol-1-yl)sulfonyl]phenyl ether;  
 5 1-phenylsulfonyl-4-(4-propylpiperazin-1-yl)-1H-indazole;  
 1-phenylsulfonyl-4-piperazin-1-yl-1H-indazole;  
 1-phenylsulfonyl-4-(4-phenethylpiperazin-1-yl)-1H-indazole;  
 1-phenylsulfonyl-4-[4-(3-phenylpropyl)-piperazin-1-yl]-  
 10 1H-indazole; and  
 the pharmaceutically acceptable salts thereof.

7. A method for the treatment of a disorder of the central nervous system related to or affected by the 5-HT<sub>6</sub> receptor in a patient in need thereof which comprises  
 15 administering to said patient a therapeutically effective amount of a compound of formula I.



(I)

20 wherein  
 A is C, CR<sub>10</sub> or N;  
 X is CR<sub>11</sub> or N;  
 Y is CR<sub>7</sub> or N with the proviso that when X is N, then  
 Y must be CR<sub>7</sub>;  
 25 R<sub>1</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or  
 an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or  
 cycloheteroalkyl group each optionally  
 substituted;

$R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are each independently H,  
halogen, OH or an optionally substituted  $C_1$ -  
 $C_6$ alkyl group;  
 $R_7$  and  $R_{11}$  are each independently H, halogen or an  $C_1$ -  
5  $C_6$ alkyl, aryl, heteroaryl or  $C_1$ - $C_6$ alkoxy group  
each optionally substituted;  
 $R_8$  is an  $C_1$ - $C_6$ alkyl, aryl or heteroaryl group each  
optionally substituted;  
 $R_9$  is H, halogen or an  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkoxy,  $C_1$ -  
10  $C_6$ alkenyl, aryl or heteroaryl group each  
optionally substituted;  
 $R_{10}$  is H, OH or an optionally substituted  $C_1$ - $C_6$ alkoxy  
group;  
 $m$  is an integer of 1, 2 or 3;  
15  $n$  is 0 or an integer of 1, 2 or 3; and  
---- represents a single bond or a double bond; or  
a pharmaceutically acceptable salt thereof.

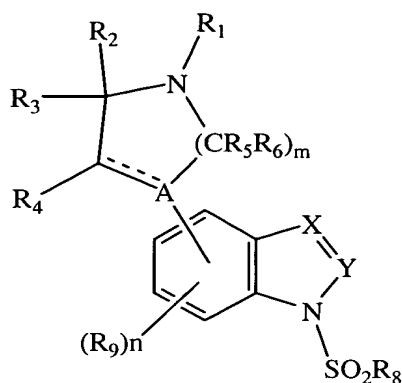
8. The method according to claim 7 wherein said  
20 disorder is a motor disorder, anxiety disorder or  
cognitive disorder.

9. The method according to claim 7 wherein said  
disorder is schizophrenia or depression.

25 10. The method according to claim 8 wherein said  
cognitive disorder is a neurodegenerative disorder.

11. The method according to claim 10 wherein said  
30 neurodegenerative disorder is Alzheimer's disease or  
Parkinson's disease

12. A pharmaceutical composition which comprises a  
pharmaceutically acceptable carrier and an effective  
35 amount of a compound of formula I.



(I)

wherein

A is C, CR<sub>10</sub> or N;

5 X is CR<sub>11</sub> or N;

Y is CR<sub>7</sub> or N with the proviso that when X is N, then  
Y must be CR<sub>7</sub>;

R<sub>1</sub> is H, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyl, C<sub>1</sub>-C<sub>6</sub>alkylcarbonyloxy or  
an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkenyl, C<sub>1</sub>-C<sub>6</sub>alkynyl or  
10 cycloheteroalkyl group each optionally  
substituted;

R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are each independently H,  
halogen, OH or an optionally substituted C<sub>1</sub>-  
C<sub>6</sub>alkyl group;

15 R<sub>7</sub> and R<sub>11</sub> are each independently H, halogen or an C<sub>1</sub>-  
C<sub>6</sub>alkyl, aryl, heteroaryl or C<sub>1</sub>-C<sub>6</sub>alkoxy group  
each optionally substituted;

R<sub>8</sub> is an C<sub>1</sub>-C<sub>6</sub>alkyl, aryl or heteroaryl group each  
optionally substituted;

20 R<sub>9</sub> is H, halogen or an C<sub>1</sub>-C<sub>6</sub>alkyl, C<sub>1</sub>-C<sub>6</sub>alkoxy, C<sub>1</sub>-  
C<sub>6</sub>alkenyl, aryl or heteroaryl group each  
optionally substituted;

R<sub>10</sub> is H, OH or an optionally substituted C<sub>1</sub>-C<sub>6</sub>alkoxy  
group;

25 m is an integer of 1, 2 or 3;

n is 0 or an integer of 1, 2 or 3; and

---- represents a single bond or a double bond; or

a pharmaceutically acceptable salt thereof.

13. The composition according to claim 12 wherein A is N and m is 2.

5

14. The composition according to claim 12 wherein R<sub>8</sub> is an optionally substituted phenyl group.

15. The composition according to claim 12 wherein R<sub>2</sub>, R<sub>3</sub>, R<sub>4</sub>, R<sub>5</sub> and R<sub>6</sub> are H.

10

16. The composition according to claim 13 wherein R<sub>1</sub> is H or a C<sub>1</sub>-C<sub>6</sub>alkyl or cycloheteroalkyl group each optionally substituted.

15

17. The composition according to claim 16 having a compound of formula I selected from the group consisting of:

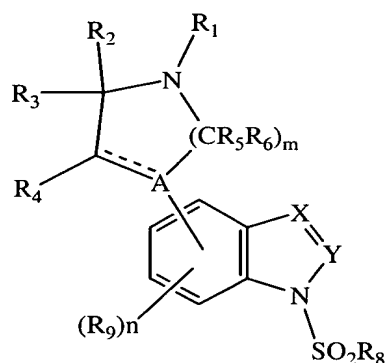
- 1-(phenylsulfonyl)-4-piperazin-1-yl-1H-indole;
- 20 1-[(2-bromophenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- 1-[(6-chloroimidazo[2,1-b][1,3]thiazol-5-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- 1-[(3,4-dimethoxyphenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- 25 1-[(5-chloro-3-methyl-1-benzothien-2-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- 1-[(4-bromophenyl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- 1-[(5-bromothien-2-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- 30 1-[(4,5-dichlorothien-2-yl)sulfonyl]-4-piperazin-1-yl-1H-indole;
- methyl 4-[(4-piperazin-1-yl-1H-indol-1-yl)sulfonyl]phenyl ether;
- 4-piperazin-1-yl-1-[[4-(trifluoromethoxy)phenyl]sulfonyl]-1H-indole;
- 35

- 4-(4-benzylpiperazin-1-yl)-1-(phenylsulfonyl)-1H-indole;  
 4-(4-benzylpiperazin-1-yl)-1-[(2-bromophenyl)sulfonyl]-  
 1H-indole;  
 4-(4-benzylpiperazin-1-yl)-1-[(6-chloroimidazo[2,1-  
 5 b][1,3]thiazol-5-yl)sulfonyl]-1H-indole;  
 4-(4-benzylpiperazin-1-yl)-1-[(3,4-  
 dimethoxyphenyl)sulfonyl]-1H-indole;  
 4-[4-(3-methoxybenzyl)piperazin-1-yl]-1-(phenylsulfonyl)-  
 1H-indole;  
 10 1-(phenylsulfonyl)-4-[4-(pyridin-4-ylmethyl)piperazin-1-  
 yl]-1H-indole;  
 1-(phenylsulfonyl)-4-[4-(pyridin-3-ylmethyl)piperazin-1-  
 yl]-1H-indole;  
 1-[(2-bromophenyl)sulfonyl]-4-[4-(3-  
 15 methoxybenzyl)piperazin-1-yl]-1H-indole;  
 1-[(2-bromophenyl)sulfonyl]-4-[4-(pyridin-4-  
 ylmethyl)piperazin-1-yl]-1H-indole;  
 1-[(2-bromophenyl)sulfonyl]-4-[4-(pyridin-3-  
 ylmethyl)piperazin-1-yl]-1H-indole;  
 20 1-(phenylsulfonyl)-5-piperazin-1-yl-1H-indazole;  
 1-(phenylsulfonyl)-6-piperazin-1-yl-1H-indazole;  
 1-[(2-bromophenyl)sulfonyl]-6-piperazin-1-yl-1H-indazole;  
 1-[(4-bromophenyl)sulfonyl]-5-piperazin-1-yl-1H-indazole;  
 1-[(4-bromophenyl)sulfonyl]-6-piperazin-1-yl-1H-indazole;  
 25 1-[(5-bromothien-2-yl)sulfonyl]-5-piperazin-1-yl-1H-  
 indazole;  
 1-[(5-bromothien-2-yl)sulfonyl]-6-piperazin-1-yl-1H-  
 indazole;  
 1-[(4-fluorophenyl)sulfonyl]-5-piperazin-1-yl-1H-  
 30 indazole;  
 1-[(4-fluorophenyl)sulfonyl]-6-piperazin-1-yl-1H-  
 indazole;  
 methyl 4-[(5-piperazin-1-yl-1H-indazol-1-  
 yl)sulfonyl]phenyl ether;  
 35 1-phenylsulfonyl-4-(4-propylpiperazin-1-yl)-1H-indazole;



1-phenylsulfonyl-4-piperazin-1-yl-1H-indazole;  
 1-phenylsulfonyl-4-(4-phenethylpiperazin-1-yl)-1H-  
 indazole;  
 1-phenylsulfonyl-4-[4-(3-phenylpropyl)-piperazin-1-yl]-  
 1H-indazole; and  
 the pharmaceutically acceptable salts thereof.

18. A method for the preparation of a compound of formula I.



(I)

wherein

A is C,  $CR_{10}$  or N;

X is  $CR_{11}$  or N;

Y is  $CR_7$  or N with the proviso that when X is N, then Y must be  $CR_7$ ;

$R_1$  is  $C_1$ - $C_6$ alkylcarbonyl,  $C_1$ - $C_6$ alkylcarbonyloxy or an  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkenyl,  $C_1$ - $C_6$ alkynyl or cycloheteroalkyl group each optionally substituted;

$R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$  and  $R_6$  are each independently H, halogen, OH or an optionally substituted  $C_1$ - $C_6$ alkyl group;

$R_7$  and  $R_{11}$  are each independently H, halogen or an  $C_1$ - $C_6$ alkyl, aryl, heteroaryl or alkoxy group each optionally substituted;

$R_8$  is an  $C_1$ - $C_6$ alkyl, aryl or heteroaryl group each optionally substituted;

$R_9$  is H, halogen or an  $C_1$ - $C_6$ alkyl,  $C_1$ - $C_6$ alkoxy,  $C_1$ - $C_6$ alkenyl, aryl or heteroaryl group each optionally substituted;

$R_{10}$  is H, OH or an optionally substituted  $C_1$ - $C_6$ alkoxy group;

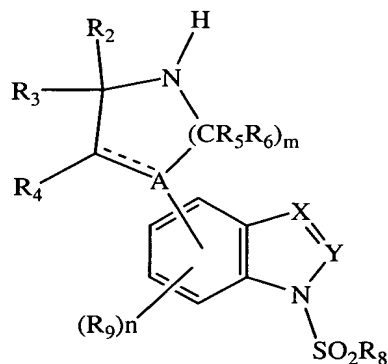
$m$  is an integer of 1, 2 or 3;

$n$  is 0 or an integer of 1, 2 or 3; and

---- represents a single bond or a double bond

said method which comprises reacting a compound of

10 formula Ia



(Ia)

15 wherein A, X,  $R_2$ ,  $R_3$ ,  $R_4$ ,  $R_5$ ,  $R_6$ ,  $R_7$ ,  $R_8$ ,  $R_9$ ,  $m$  and  $n$  are as defined hereinabove for formula I with a compound  $R_1$ -Hal wherein  $R_1$  is as defined hereinabove for formula I and Hal is Cl, Br or I.